



PERFORMANCE WORK STATEMENT (PWS)

Information Technology (IT) - Geospatial, Analytics, Visualization, and Envirofacts Information Technology Support (GAVETS)

in support of:

United States Environmental Protection Agency (EPA)

GSA R9 FAS AAS Project Number ID09180089

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1 General

1.1 Requiring Agency

United States Environmental Protection Agency (EPA) Office of Environmental Information (OEI) Office of Information Management (OIM) MC 2831T EPA West 6312U 1200 Pennsylvania Avenue, NW Washington, DC 20460

1.2 **Contracting Agency**

General Services Administration (GSA)
Federal Acquisition Service (FAS), Pacific Rim Region
Contracting Division (9QZA)
50 United Nations Plaza., 2nd Floor
San Francisco, CA 94102-3434

The GSA FAS Acquisition Operations Division has primary responsibility for contract award and administration.

1.3 Requiring Agency Description

The EPA Office of Environmental Information (OEI) is headed by the Chief Information Officer. As stated on the EPA website, https://www.epa.gov/aboutepa/about-office-environmental-information-oei, OEI manages the life cycle of information to support EPA's mission of protecting human health and the environment. OEI includes the Office of Information Management (OIM) which is the lead organization for information standards, information collection and exchange, information analysis and reporting, and web infrastructure and reporting. This organization serves as the Agency lead for information collection, management, and reporting/publishing programs as well as developing and overseeing related Agency policy and web services. A list of programs and projects managed by OIM is listed at https://www.epa.gov/aboutepa/about-office-environmental-information-oei#oim.

1.4 Background

Data is the lifeblood of EPA. The Agency uses data to promulgate regulations and conduct program development activities, implement and enforce programs and evaluate their performance. EPA also needs to make its data available to the states, tribes, territories, the regulated community, environmental advocacy groups and the public. Agency staff requires data to evaluate the health impacts of chemicals and pollutants and estimate the costs associated with controlling or banning them. These studies provide the basis for EPA's decisions for regulations, non-regulatory programs, guidance and other policies. EPA analyzes data as part of its permit writing programs and uses data to plan program implementation and deploy enforcement and compliance resources. Additionally, the Agency requires data to measure and communicate progress in improving environmental quality and public health outcomes and to determine if programs need to be modified to increase their effectiveness and/or efficiency. Finally, to meet its transparency and open government objectives, EPA needs to make data available to the public. To meet these demands for data access and analysis, the Information Access and Analytic Services Division (IAASD) within the Office of Information Management (OIM) plans to design, develop, deploy, operate and maintain EPA's new approach to data, known as the EPA Digital Analytics Program or EDAP. While infrastructure in EDAP is under development, the Agency will continue to operate and maintain its current data warehouse and suite of applications, Envirofacts, and other applications that use Envirofacts data. (See: https://www3.epa.gov/enviro/) Following completion of EDAP, EPA will migrate these applications to it to exploit the new technologies used within EDAP. EPA has embarked on these efforts because Envirofacts is quickly becoming unable to meet EPA's business requirements and user needs. Envirofacts uses a relational database management system (RDBMS) to store structured data obtained

from EPA's program office systems. This approach has limitations. First, there is a need to manage and understand vast amounts of unstructured data and information. Second, flexibility is needed to meet varied business needs, including unstructured data search and user requirements for data access and analysis. EDAP is a cloud-hosted approach to data management, access and analysis. The cloud offers EPA three distinct advantages. First, it is less costly than operating and maintaining a physical data center. With the cloud, EPA only pays for the storage space and the computing power it uses. The cloud is also scalable, meaning that the storage space and computing power expands and contracts based on the Agency's needs. With a traditional data center, the agency needs to have excess capacity to meet peak demand. EDAP will be able to exploit new data management technologies that provide for flexibility in the way EPA stores the data. This flexibility will enable EPA to meet optimally a broad range of data access and analysis needs. EPA will also build data analysis capabilities within the data platform for users with high-end analytical needs. These capabilities are especially relevant for "big data" (e.g., satellite and other remote sensor data) where computing power and speed are absolutely critical. Lastly, the Agency will offer COTS tools such as Qlik Sense and custom build applications to access, analyze and visualize data. This component of the EDAP will also include EPA geospatial applications, as well as the tools necessary for users to develop their own geospatial applications and maps. OEI will design, develop, and deploy EDAP in collaboration with EPA programs and regional offices using the framework of the EPA Enterprise Architecture (EA). Working closely with internal partners is a necessary precondition to meeting the broad spectrum of requirements across the Agency. Additionally, OEI will need to ensure that EDAP is meeting the needs of external partners (e.g., other federal agencies, state coregulators, tribes) and stakeholders.

1.5 **Scope**

1.5.1 Technical Requirements

The technical requirements for this task order are described in Section 3.0 TECHNICAL REQUIREMENTS. The work is primarily Information Technology (IT), providing Geospatial, Analytics, Visualization, and Envirofacts Information Technology Support falling under NAICS: 541512, Computer Systems Design Services. The IT work is routine (website management, analytics, data management support, geographic information systems). The data itself is highly specialized (environmental programs, Geospatial, Visualization). The Contractor is required to provide Cloud Services on a Cost Reimbursable basis. The Contractor shall provide monthly metrics detailing system use, customer accessibility, and growth opportunities.

1.5.2 Additional information

See the Appendix section for additional information on the breadth and type of data expertise required.

Appendix A - Software Components Utilized within the GAVETS Task Order

Appendix B – EPA Systems and Applications within the GAVETS Task Order

1.5.3 EPA Digital Analytics Program (EDAP)

The contractor will assist EPA in implementing the EPA Digital Analytics Program (EDAP) and related activities, such as, but not limited to:

- Design, implement, operate and maintain the cloud-based data management architecture (i.e. Data Platform);
- Enhance, operate and maintain current applications (e.g. EJSCREEN, EnviroMapper, MyEnvironment) and the GeoPlatform along with associated interface and data management tools;
- Migrate current Envirofacts applications and tools to the EDAP Data Platform when ready;
- Support the Envirofacts warehouse and associated tools and migrate functionality to the cloud-based Data Platform, when ready;
- Design, develop, deploy, enhance and operate and maintain analytical, geospatial and visualization tools as well as web-based applications and a search engine;
- Test and debug all data products developed under the contract and ensure that products comply with Agency information security requirements;
- Conduct User Acceptance Testing;
- Design and deliver workshops and training;
- · Manage data through all life-cycle phases and new data types;
- Evaluate emerging technologies and their potential use at EPA along with other forms of technical support. This can include facilitating cloud deployments (i.e. hosting and recommendations on

architecture to help drive from infrastructure as a service to platform as a service whenever feasible).

1.5.4 Purpose

The purpose of this task order is to provide contractor support for the EDAP implementation, including, but not limited to:

- Design, implement, operate and maintain the EDAP Data Platform;
- Support current applications (e.g. EJSCREEN, MyEnvironment) and the Geospatial Platform and integrate them with the EDAP Data Platform when ready;
- Support Envirofacts warehouse and its suite of applications;
- Migrate current applications and tools from Envirofacts, as needed, to the EDAP Data Platform, when ready;
- Hosting efforts with partners;
- · Implement new analysis and visualization tools, as needed;
- · Implement user engagement efforts;
- Manage data, including enriching it with registries, taxonomies, controlled vocabularies, and linked data; indexing it; and reorganizing it to enable time series analyses and to make it easier to query; and
- Coordinate and communicate with internal and external partners and stakeholders.

In addition, EPA requires a range of other technical support related to the EDAP implementation and the transition from the current data access/analysis environment to the EDAP Data Platform. Depending on the specific project, the target audience of task order efforts can be internal EPA users, external users, or a combination of the two. Applications, websites and interfaces will vary in nature. Associated data management may very well span all the data management lifecycle categories and would include the latest data types that help support data analytics. Interface development will also be varied, from simple to complex.

1.5.5 Contract Type: Labor Hour

The work will be Labor Hour. The Government will establish a not to exceed ceiling for travel and other direct costs. As shown in Appendix D, workload priorities and application usage can fluctuate greatly from month to month. In addition, EPA's mission priorities, objectives, and budget could change impacting task requirements on this task order. Therefore, at this time the Government cannot reasonably predict requirements, quantity, schedule, deadlines or amount of work that will be required on this task order. For this reason, the work will be performed on a Labor Hour basis. The Government will require detailed monthly tracking of hours for each skill level and project listed under this task order. The Appendix section contains charts that the Contractor shall update on a monthly basis in order to track the workload fluctuations. An Other Direct Cost (ODC) line has been created for Travel and Amazon Web Services anticipated to support this requirement.

PWS Paragraph	Туре
3.1 Project Management & Transition Plan	Labor Hour
3.2 Meeting & Outreach Support	Labor Hour
3.3 Envirofacts & Related Applications	Labor Hour
3.4 Data Platform, Data Science & Analytics, Data Management, Database Development and Modifications	Labor Hour
3.5 Application Development	Labor Hour
3.1.2 Amazon Web Services	Cost Reimbursable
9.4 Travel	Cost Reimbursable

1.6 Hours of Operation

The Contractor shall be available for Government questions and perform the services required under this effort Monday through Friday, during normal business hours.

1.7 Period of Performance

This effort includes a 12 month base period.

1.8 Authority of Government Personnel

1.8.1 Contract Administration -

The contract will be administered by Fred Hersom, Contracting Officer for GSA – Federal Acquisition Service. Email –Fred.Hersom@gsa.gov. Only the GSA Contracting Officer (CO) may make changes to this contract. The CO is the sole interpreter of contract terms and conditions. All contractual agreements, commitments, or modifications which involve price, quantity, quality, or delivery schedules shall be made by the Contracting Officer.

1.8.2 Contracting Officer Representative (COR)

The Contracting Officer (CO) will appoint an EPA Contracting Officer Representative (COR) in writing for this task order. The primary COR is Mr. Kevin Maxwell of EPA. The Alternate COR, should the primary be unavailable is Ms. Julie Kocher of EPA. The COR will receive for the Government all work called for by the task order and will represent the CO in the technical phases of the work. The COR is required to review deliverables and sign the GSA Form 3025 – Receiving Report for the Government before the Contractor can submit invoices. The COR will provide no supervisory or instructional assistance to Contractor personnel. The COR provides technical review of deliverables, invoice servicing and facilitating payment. The name and contact information will be provided at the kick off meeting. The CO will provide the COR contact information in writing after award of the task order.

1.8.3 GSA Project Manager

The GSA Assisted Acquisition Services Project Manager will be Mr. Patrick Galamay. The PM is the first line contact of GSA for COR. The PM is the interface between the requiring organization and the contracting organization. The PM reviews issues raised by the COR and decides if and when to refer to the Contracting Officer those matters, other than purely technical problems, that may affect the contract. As such the PM refers those matters, other than purely technical problems, which may affect the contract scope, cost, performance or otherwise necessitate a formal contract modification to the CO. The PM will coordinate and forward to the Contracting Officer (CO) for further formal contract action as deemed necessary. The PM will:

Ensure that neither party is arbitrarily enlarging the scope of the contract or changing delivery schedules or otherwise obligating the Government to unanticipated or deferred cost and assuring that there is no duplication of work or costs.
In coordination with the COR, informs the Contracting Officer when the contractor
is known to be behind schedule, with the reasons therefore and coordinating with
the COR and Contracting Officer corrective action necessary to restore the
contract schedule.
Furnish to the Contracting Officer a copy of any contractually significant
correspondence in order to prevent possible misunderstanding or creation
of a condition that may be the basis of a later claim.
Review and submit recommendations to Contracting Officer on subcontracts
with respect to their relationship with the prime contracts.
Provide necessary Government interpretation of the contract's technical
requirements from cognizant sources, when requested by the contractor or COR

Exclusions: Among the exclusions of the COR's and PMs' authority are:

- Issuing instructions to the Contractor to start or stop work
- Directing the contractor to perform work, unless explicitly provided for in the contract
- Modifying the stated terms, conditions, or costs of the contract
- Waiving the Government's rights with regard to the contractor's compliance with the specifications, price, delivery, or any other terms or conditions approving items of cost not specifically authorized by the

contract

- Directing changes
- Executing supplemental agreements
- Rendering a decision on any dispute on any question of fact under the Disputes provision of the contract
- Taking any action with respect to termination, except to notify the Contracting Officer of possible conditions of breach
- Authorizing delivery or disposition of Government-furnished property not specifically authorized by the contract
- Giving guidance to the contractor, either orally or in writing, which might be interpreted as a change in the scope or terms of the contract
 - Discussing procurement plans, or any other advance information that might provide preferential treatment to one firm over another, when a solicitation is issued for a competitive procurement.

Any conduct by these officials, or other Government representatives, considered by the Contractor to constitute a change under the contract shall be communicated promptly to the CO, in writing. Following submission of such notice to the CO, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with the terms and conditions of the Contract.

The CO is the sole interpreter of contract terms and conditions. All contractual agreements, commitments, or modifications which involve price, quantity, quality, or delivery schedules shall be made by the Contracting Officer. As per 52.212-4(c) Changes, changes to the terms and conditions of this contract may be made only by written agreement of the parties.

1.9 Key Personnel

Key Personnel have the responsibility for critical day-to-day operations of the major requirement areas critical to the successful fulfillment of requirement. The Contractor agrees that it shall use reasonable best efforts to employ and retain the person(s) listed as "Key Personnel" in its quote during the term of this Contract. If, for any reason, the Contractor is unable to employ and retain during the term of the Contract any particular person listed as "Key Personnel" in its order, the Contractor agrees to substitute such individual with another person who has comparable qualifications (education and experience) as the person being replaced. The Contractor shall afford the Contracting Officer and COR reasonable advance written notice of any proposed "Key Personnel" substitutions and the Contracting Officer shall have the right to reject any proposed substitutes. The Contractor shall be responsible for proposing optimal team/responsibility alignments and making changes, as necessary. The Contractor shall designate certain personnel as "Key Personnel," in its quote and provide the resumes for these individuals and any replacements.

1.10 Key Qualifications

The Contractor shall only propose personnel that are expected to quickly pass the background check required for issuing a Common Access Card (EPASS) and EPA email account. The Contractor shall ensure personnel working are this task can professionally and clearly communicate EPA project goals and priorities to both EPA customers and outside vendors seeking to do business with EPA.

1.11 Security

1.12 Installation/Location Access

All work performed by the contractor shall be done at the contractor location with the exception of the following:

- Meetings scheduled at the EPA location
- Installation of test and final versions of software
- Special requests for meetings at an off-site location

The Contractor will be available for meetings taking place at the Government's facility, in the GSA offices at EPA Headquarters 1200 Pennsylvania Avenue, NW in Washington, DC 20460.

1.13 Systems Access

For any Contractor personnel performing work under this PWS who shall require access to EPA IT applications, systems, or data, the Contractor(s) shall comply with EPA security requirements to secure the personal identity verification (PIV). Vendor proposed personnel must have Moderate Risk Background Investigation (MBI) by the RFQ Response Date, and provide a statement which indicates background investigation status of all proposed personnel. The Contracting Officer retains the right to request removal of Contractor personnel, regardless of prior clearance or adjudication status, whose actions, while assigned to Task Orders, clearly conflict with the interest of the Government. The data to be used with the applications may contain Confidential Business Information (CBI). It may be necessary at some point, based on the development effort to utilize sensitive financial data/information. Nondisclosure agreements will be used prior to use of any sensitive government or financial data. Also any contractors requiring direct access to EPA systems will be required to undergo a background check. Confidential Business Information (CBI) may include specific requirements for accessing information covered under the Toxic Substance Control Act (TSCA). The contractor, when cleared for TSCA Confidential Business Information shall follow the procedures in the TSCA CBI Protection Manual. The required CBI clauses from the EPA Acquisition Regulation 1901 (9/12/2000) are:

1552.235-78 "Data Security for TSCA Information (December, 1997)"

1552.235-75 "Access to TSCA CBI (April, 1996)"

1552.235-76 Treatment of TSCA CBI (April, 1996)"

See TSCA CBI Protection Manual at 2.2.

1.14 Required Plans

1.14.1 Project Management Plan

The contractor shall prepare a Project Management Plan recommending the "best" (optimum) method for completing each PWS task within the allotted time and budget. For initial project management efforts, the Contractor shall provide a project management plan that shows details associated with development processes to include the following:

- Requirements Management
- Development Methodologies such as Agile
- Testing Methodologies and Procedures
- Documentation based on need
- Development environment
- Standards (Federal and EPA) utilized

1.14.2 Quality Control Plan

Quality Control Plan (QCP)

The Contractor shall provide a Quality Control Plan (QCP) that shall contain the information required to identify how the specific task will meet contractual requirements and the management techniques in place to ensure compliance and monitoring of contract and contractor personnel to include subcontractors or consultants. This QCP shall be submitted within 20 work days after receipt of award.

1.14.3 Transition Phase-Out Plans

The Contractor shall recognize that services under this requirement are vital to the Government and must be continued without interruption and that upon contract expiration, a successor, either the Government or another contractor, may continue such services. The Contractor shall cooperate to effect an orderly and efficient transition in the event of transition to a successor. The Contractor shall provide a plan for transitioning out upon completion of this Order. The Transition Plan shall be due 60 calendar days after receipt of order. Upon Government approval, the Contractor shall implement its Transition Plan. Prior to the end of the period of performance on this award the Contractor shall begin to transition all data,

information, training material, and all deliverables to the Government office. The Contractor shall provide detailed instructions to the EPA on how to transfer the Amazon Web Services (AWS) account, data, and systems either to the Government or to another contractor at the end of this task order. The detailed instructions are due 60 days after receipt of task order. The contractor shall transfer ownership of the EDAP cloud hosting account and the associated private keys along with supporting documentation to EPA or an EPA designated contractor no later than four weeks before the end of the task order.

1.14.4 Safety Plan

The contractor Safety Plan must show how the contractor will abide by all safety policies, regulation and requirements at EPA.

1.14.5 Security Plan

The contractor Security Plan will show how the contractor will abide by all security policies, regulations, and requirements at EPA.

2 Reference Documents

The Contractor shall comply with the latest version of all mandatory guidance documents while task order is performed. All work performed by the contractor must adhere to the policies, guidance and standards in the following manuals (this is not an exhaustive list and the COR will advise as necessary concerning these type documents):

- EPA Enterprise Information Management Policy (EIMP)
- https://www.epa.gov/sites/production/files/2015-08/documents/cio-2135-0.pdf
- EPA Digital Strategy https://www.epa.gov/open/digital-strategy
- EPA National Geospatial Program https://www.epa.gov/geospatial
- EPA Geospatial Data Policies and Standards https://www.epa.gov/geospatial/geospatial-policies-and-standards
- EPA Accessibility and Section 508 Guidance https://www.epa.gov/accessibility/section-508standards

These policies and guidance documents are publicly available and can be made available by the COR/CO for Contractor review, upon request.

3 Specific Tasks

The Contractor shall perform all functions described in section 3.0 during normal business hours.

3.1 **Project Management**

The Contractor shall manage and coordinate all activities listed in the Performance Work Statement (PWS). The Contractor shall be responsible for staffing, providing quality products and deliverables, and administrative reporting. Quality of products shall be measured against a specific quality assurance surveillance plan (QASP) developed for this task order. Due to technology changes and evolving Agency IT requirements, EPA anticipates that the use of Agile development will play a critical role in meeting the requirements of this task order. Therefore, the Contractor shall have Program Management Institute (PMI) – Agile Certified Practitioner (ACP) certification to ensure the project activities follow the PMI-ACP certified policies and practices where deemed necessary.

3.1.1 Change Control Board (CCB)

To support project management, a change control board (CCB) meeting will be held once every two weeks to assist in monitoring task order efforts and to ensure appropriate technical direction The CCB will be held at the Contractor location unless otherwise arranged. The Contractor shall produce minutes for these meetings and submit them to the COR within 10 days of the meeting. Along with CCB minutes, the Contractor shall provide monthly management reports including information on efforts for the month and expenditures for the task order by project. The Contractor shall also carefully track Government costs associated with specific efforts under the task order.

3.1.2 Amazon Web Services (AWS)

On a Cost Reimbursable basis, the Contractor shall provide monthly Amazon Web Services (AWS) to host EPA's Digital Analytics Program (EDAP) Account. The Contractor shall provide cloud services on a monthly basis and provide hosting metrics to include the number of users, numbers of applications supported and recommendations for improving EPA's use of the environment. See Appendix B and Appendix C for current list of areas and services currently utilized. This list shall be updated monthly.

3.1.3 EPA Operating Procedures

For operations associated with this order, the Contractor shall adhere to any emerging procedures associated with access to EPA systems. EPA will provide specific information on these procedures as necessary. The Agency anticipates that there will be at least one change associated with access during the period of performance.

3.2 Meeting and Outreach Support

3.2.1 Development efforts

The Contractor shall conduct meetings and any other outreach efforts necessary to support the development efforts of this task order. Outreach support will include such activities as the preparation of outreach materials, support and/or conduct of demonstrations, briefings and user training, as necessary. The Contractor shall set up meeting sites, including any technologies that may be utilized for the specific outreach activity. Any outreach support shall be initiated by the COR via email or a verbal request at a CCB. This request shall be entered in the CCB notes as technical direction.

3.2.2 Training and User Manuals

The Contractor shall work with the client to develop user manuals or help modules, and conduct trainings, as needed, for efforts under this task. This training may be conducted at the contractor site, EPA Headquarters or Regional Offices, or an offsite area to be determined by the involved offices.

3.2.3 Virtual Help Desk

The Contractor shall develop and operate a virtual "help desk" using email, SharePoint, Customer Relations Management software or another solution approved by the COR. The Contractor shall review and answer all user feedback issues and questions regarding Envirofacts searches and applications submitted through the help desk. The Contractor shall forward program specific email questions to the appropriate program offices and track status of the responses. The Contractor shall direct questions that are EPA-related, but not relevant to Envirofacts or its associated program systems, to the appropriate EPA websites. Emails that are not EPA related shall be answered informing the user that they have contacted EPA mistakenly, and suggest alternatives.

3.3 Envirofacts and Related Web-Based Applications

3.3.1 Application Support

The Contractor shall maintain Envirofacts applications and supporting databases, including planning for and moving the database functionality to the Data Platform and modernizing the associated Envirofacts applications. The Contractor shall also support related geospatial applications which may utilize Envirofacts-based services.

The Envirofacts applications and related interfaces include, but are not limited to, ICIS-AIR, ICIS-NPDES, Brownfields Cleanup (ACRES), SEMS, ECHO/IDEA, FRS, RadNet, RCRA, ICIS, NEI, TRI Analyzer, TRI Explorer, MyProperty, and TRI. These applications/interfaces may be found under Envirofacts System Data Searches on the Envirofacts home page at www.epa.gov/enviro.

3.3.2 Migration Support

The Contractor shall migrate existing Envirofacts functionality into the Data Platform, when it is ready, and modernize the end user applications, as needed.

3.3.3 Database Management

In support of any relational database data management effort, the Contractor shall utilize source input such as, but not limited to, entity-relationship diagrams (logical models), entity/attribute data dictionaries, requirement information and physical models. It may be necessary to create both logical and physical data model to support enhancement under this task. The Contractor shall also under take quality assurance measures within the data structure to ensure that retrievals from the database produce the expected results. The Contractor shall ensure that any efforts associated with this task adhere to the current content management system utilized by EPA, such as, but not limited to Drupal. The contractor shall perform regular data refreshes for the data systems under Envirofacts.

3.3.4 Technical Documentation and White Papers

The Government is continually seeking new hardware and software products, services and IT solutions to improve efficiency and effectiveness. The government office identifies optimum solutions, including acquisition vehicles and managed services, to best meet the agencies need to obtain best value and cost effectiveness.

The Contractor shall identify new IT solutions in the marketplace, review government documentation and market research, and provide technical recommendations and white papers to improve the documentation required for the government to solicit or purchase new IT solutions. The types of IT technical recommendations, project management and documentation support that could be required under this task would be:

- Analysis of new product or capability
- o Perform market research and technical experience
- Provide recommendations and historical data

3.4 Data Platform

3.4.1 Data Platform

The Contractor shall provide plans and recommendations for building the new cloud-based Data Platform. Building the new cloud-based Data Platform, to which Envirofacts functionality will be migrated when ready, will include data management capabilities, as well as capabilities to use data analytics, geospatial and visualization tools. It will also include the development of approaches for distributed computing, new access protocols, API development, authentication mechanisms and access management. This task will also support assistance with establishing a cloud-based infrastructure and architecture, administering that environment and assisting its users. It can also include supporting collaborative cloud-based efforts such as, but not limited to, the Linked Open Data Platform.

3.4.2 Data Management & Database Development/Modification

The Contractor will provide support in developing and documenting application programming interfaces (APIs) to support developer access to data and services in the platform. Service enabling of databases will be essential to meet the needs for data consumption both in support of public access and for internal use, as well as to support microservices-oriented approaches. Web services will need to be developed following RESTful conventions and provide standards-oriented metadata and documentation, (e.g., Swagger/RAML) as appropriate. These databases will support a variety of business needs including analyses to support regulatory programs, chemical toxicology and exposure, pollution prevention and grant and financial operations. Data management efforts shall also include access to and management of unstructured data, geospatial data and other structured data to help meet emerging Agency business requirements, as well as ETL/ELT (extract, transform, load vs. extract, load, transform) and automated approaches where appropriate.

3.4.2.1 Data extraction and insertion

The Contractor shall ensure timely data extraction and insertion to support data warehouse needs, data mart needs, and any other data management efforts. The work will focus on extraction from a number of program specific legacy systems, transformation of data as necessary and the eventual inclusion of this

data into the data warehouse(s)/stores/lakes or individual databases and availability to a variety of applications. The Contractor shall work with the program offices that provide legacy data to help ensure a high level of data quality and adequate data management. Documentation and metadata shall be necessary as components of these efforts.

3.4.2.2 Data services and database analytical services

Using data from several sources developed, maintained and enhanced under this task order, the Contractor shall create both data services and database analytical services (reusable analytical processes actually run directly against the data, whether within the database as procedures or distributed computing tasks run against the data in the data platform) to meet a variety of business requirements.

3.4.2.3 Improvements

To assist in the upgrade/reinvention of Envirofacts the Contractor shall support the adoption of new technologies to improve efficiencies while reducing operating costs. This may include the integration of open source technologies such as but not limited to NoSQL and Hadoop and Apache Spark and other emerging data analytic and machine learning tools as appropriate to discover data patterns and information that can provide insight into EPA data and support numerous business requirements. The Contractor shall support the development, maintenance and management of the Data Platform.

3.4.2.4 Data preparation and data conversion

The Contractor shall do both data preparation and data conversion as necessary to support a number of business needs. This includes replicating and improving current Envirofacts functions to enrich validated data from programs with registries such as, but not limited to, Facility Registry Services and Substance Registry Services, taxonomies, controlled vocabularies, and linked data. It also includes indexing the data to facilitate its search and discovery; and reorganizing it to enable time series analyses and to make it easier to query.

3.4.3 Data Science & Analytics

The Contractor shall build a cloud-hosted infrastructure, which will include components that facilitate data science work for agency stakeholders. Examples of these components include self-service queries, machine learning and analysis for technical users proficient in languages such as Python and R. These users may access the system via hosted notebook-based tools such as Jupyter Hub, facilitating access to disparate datasets, whether unstructured content, RDBMS, geospatial data, raster and multidimensional datasets, streaming data or graph data. The analytical capabilities will leverage distributed computing in a scalable cloud-based environment, initially with an ecosystem of tools, including containerization (i.e. Docker), an orchestration framework, such as but not limited to, Mesos that coordinates the operation of the containers to allow flexibility and scalability and a seamless approach for application development and operations. The Contractor shall recommend and develop reusable analytic or processing services developed in the platform to become production services such as predictive analytics (e.g., by packaging Python code into a reusable function such as Amazon Lambda). These would be published with documented REST APIs for service connections. Under this task, the Contractor shall develop specific analytic products using the Data Science and Analytics Platform for program office staff who have a requirement but lack the technical ability to use the platform.

3.4.4 Technical Documentation and White Papers

The Government is continually seeking new hardware and software products, services and IT solutions to improve efficiency and effectiveness. The government office identifies optimum solutions, including acquisition vehicles and managed services, to best meet the agencies need to obtain best value and cost effectiveness. The Contractor shall identify new IT solutions in the marketplace, review government documentation and market research, and provide technical recommendations and white papers to improve the documentation required for the government to solicit or purchase new IT solutions. The types of IT technical recommendations, project management and documentation support that could be required under this task would be:

o Analysis of new product or capability

- o Perform market research and technical experience
- Provide recommendations and historical data

3.5 **Application Development**

Under this task the Contractor shall develop and maintain a number of end user applications. These applications will support a variety of business requirements including but not limited to analysis and visualization. They will exploit analytical, geospatial and data services that can be used to rapidly meet business requirements and be flexible to change as those requirements change. They may be used to help meet the information integration efforts of a variety of programs. Support shall include the continuing development and maintenance of specific applications along with new development. Applications and interfaces shall be built following a pattern of microservices-based development wherever appropriate.

3.5.1 Data Visualization

The Contractor shall develop and support work toward providing reusable data visualization capabilities through multiple mechanisms, such as, but not limited to: COTS tools such as QlikSense, R/ggplot/Shiny and others; Python development libraries for visualization (e.g., Python/matplotlib/Bokeh and others); and Javascript visualization libraries such as d3.js. EPA expects that the data visualization tool sets used across the agency will vary over time. The primary output for the applications under this task is the rendering of interactive, exploratory visuals and graphics, to help aid in understanding patterns, trends and structures in data. These may include conventional charts, graphs and statistical plots, or multidimensional data, network graphs, visual text analytics or other types of visualizations as appropriate. It may also be necessary to develop code to provide connectors/extensions between visualization tools and analytics tools and data services, such as custom extensions for QlikSense.

3.5.2 Geospatial

- 3.5.2.1 Much of EPA's work is place-based. Under this task, the Contractor shall develop GIS applications, analytical services and widgets, as well as, data/map services to support a variety of business requirements. These GIS applications will exploit a variety of analytical and data services that can be utilized to rapidly meet business requirements and be flexible to change as those requirements change. They may be used to help meet the information integration efforts of a variety of programs. For visualization of both data and the outcome of analytical processes, a variety of technologies shall be used, including but not limited to, Bing Maps, and a variety of emerging ESRI products such as ArcGIS Enterprise and EPA's GeoPlatform. When developing these applications, any new analytical processes developed as a component of the applications shall be done in a manner that they can be utilized as a service and/or widget to potentially support the development of other applications. GIS support shall include the continuing development and maintenance of existing applications and services, such as but not limited to, NEPAssist, MyEnvironment, EJSCREEN, Emergency Response Dashboard, and EnviroMapper, along with new development in support of EPA's GeoPlatform.
- 3.5.2.2 Work associated with this task shall include, but not be limited to, cross-agency initiatives as they relate to geography including Environmental Justice, environmental reviews, and the American Indian Environmental Office, among others. This will allow for the mix and match of data and analytical services in an effort to build mash-ups to meet user needs. Services shall be reusable by applications and combined in a variety of ways to meet user needs and reduce costs associated with application development. All services shall have appropriate documentation/metadata associated with them to assist users in meeting needs.
- 3.5.2.3 There is a need to leverage the Data Platform capabilities in support of geospatial analytics, whether leveraging spatial features and spatial data types to augment big data analytics, such as querying large datasets by polygon, or in spatial aggregation, geoprocessing of large datasets in the cloud, or raster analytics such as remote sensing feature extraction. In support

of geospatial analytics efforts, the Contractor shall develop and provide support for reusable geospatial analytics capabilities, such as but not limited to, custom geoprocessing tasks that leverage Apache Spark, remote sensing applications that leverage distributed computing, and/or machine learning applications involving large spatial datasets.

- 3.5.2.4 Under this task, GIS reporting/analytical applications shall be developed for use within the GeoPlatform. The Contractor shall develop analytical services or widgets, as well as, data/map services that can be called by a variety of applications to help meet stakeholder and a variety of user needs, such as, how close a regulated facility may be to a stream or ecologically sensitive area, or how a chemical may spread based on environmental conditions. Support shall also include registering, cataloging, discovering, searching, and documenting these items.
- 3.5.2.5 It may be necessary for the contractor to use these services and applications to support emergency operations efforts. The COR will give specific directions when it is necessary to support emergency operations efforts.
- 3.5.2.6 For any GIS applications and web sites the Contractor shall utilize appropriate Agency content management systems and any associated standards or directives.

3.5.3 Access, Reporting, Workflow, & Analysis

The Contractor shall enhance and/or develop access, reporting, workflow or analysis applications, including analysis of environmental indicators and their trends that support business needs of either projects or programs within EPA. These tools shall provide the insight needed to make smart business decisions such as whether or not to adjust strategies or revise goals and objectives. The Contractor shall utilize appropriate reporting tools to support the specific requirements as necessary. They may support the analysis of EPA programs. EPA anticipates that these applications will be at a medium level of complexity. The COR(s) will provide technical direction for the application in consultation with any client that may want to develop such applications under this task order. These access reporting, workflow and analysis applications include but are not limited to:

- Modernizing the Envirofacts user interface to include powerful new search capabilities of both structured data and unstructured documents using tools, such as Elasticsearch
- Grant workflow application and data, supporting the Office of Grants and Debarment
- TRI National Analysis Annual Toxics Release
- Performance Management Dashboard, supporting the Office of the Chief Financial Officer

All efforts under this task will adhere to the content management system or systems utilized by EPA.

3.5.4 Mobile

Mobile applications help users by connecting them to internet series usually accessed on desktop or notebook computers, or help them by making it easier to use the internet on their portable devices. A mobile application may be a native app, mobile website, a bookmarking utility, a mobile based instant messaging client or a variety of other applications. Mobile applications development will focus on applications supporting Windows, iOS, and Android.

These mobile applications may include geo location and server synchronization functionality to facilitate offline use. Some may require image processing and photo tagging capabilities. It may be necessary for geo-enabled services to integrate location aware data with data from databases such as Envirofacts or the Data Platform. The Contractor shall be required to develop a number of mobile applications of medium to complex functionality. The Contractor shall also provide support, as needed, for existing mobile apps such as, but not limited to, UV Index, Indoor airPLUS, and Indoor Air Quality Tools for Schools. The applications may access databases such as Envirofacts and may include mapping, analytical and other types of functionality. The COR will provide written technical directions for any mobile application efforts in conjunction with technical managers that will oversee the application development effort.

- 3.5.5 White Papers & IT Solution Research Pertaining to Interface/Application Development The Government is continually seeking new services and IT solutions to improve efficiency and effectiveness. The government office identifies optimum solutions, including acquisition vehicles and managed services, to best meet the agencies need to obtain best value and cost effectiveness. The Contractor shall identify new IT solutions in the marketplace, review government documentation and market research, and provide technical recommendations to improve the documentation required for the government to solicit or purchase new IT solutions. The types of IT technical recommendations and documentation support that could be required under this task would be:
 - Analysis of new product or capability
 - o Perform market research and technical experience
 - Provide recommendations and historical data
- 3.6 (Optional) Envirofacts, Geospatial, Application, Analytics, Database Support Surge The contractor shall support planned and unplanned surge applications and database support activities. This support may cross all tasks within the task order, including Envirofacts and related applications, geospatial services, and the Data Platform. Activities that may need support include, but are not limited to, emergency response and COOP efforts, support for new regulatory mandates, unusually high demand from the public or federal partners for data services and information. Each of these two optional contract line items, "Surge" and "New Cloud Analytics, Applications and Services," will only be exercised if determined by the Government to be necessary. In such an event, the Government will provide a requirement statement within the scope of the order and request a price proposal from SAIC. Work will only begin once the parties have agreed via a bilateral modification to an offered solution at a fair and reasonable price.
- 3.6.1 Surge process: Not to Exceed Ceiling (NTE) is \$724,527.50 In the event there are unanticipated increased EPA demands for support services, the Government reserves the right to exercise "surge" option CLINs for additional hours and additional technical expertise. Optional surge capability support will be invoked at the Government's discretion through a written task order modification issued by the GSA Contracting Officer. Prior to awarding the modification, the Contracting Officer will provide the Contractor with a written request for surge capability specifying the unforeseen, ad hoc or unplanned increases in workload support required, the nature of work to be performed, deliverables, and required timeframes. The Contractor shall respond to this request in writing within five (5) business days with a quote showing the proposed staffing plan and notional schedule to meet the government's requirements.
- 3.6.2 (Optional) New Cloud Analytics, Applications, and Services: NTE is \$710,504.30
- 3.6.2.1 Data Analytics As EPA moves to the cloud, new analytic capabilities will be possible to analyze and visualize large amounts of data to aid in understanding patterns and trends. It is anticipated that the number of users for the data analytics platform will continue to increase, as well as the demand for the development of new data analytics applications and tools such as, but not limited to Jupyter Notebook.
- 3.6.2.2 Analytic & Visualization Applications As part of the cloud effort, new applications will be developed, as needed, that utilize the expanded analytic and visualization capabilities of the cloud. It is anticipated that the data visualization tools will vary based on requirements and include, but not be limited to, Qlik Sense, ArcGIS, Python development libraries for visualization, and Javascript visualization libraries. These applications will provide interactive, exploratory visuals and graphics, to help aid in understanding patterns, trends, and structures in data.
- 3.6.2.3 Shared Data Services EPA program offices will be referred to this task order for the development of new shared data services. Reusable services must be developed whenever possible when implementing new IT applications. This will help to reduce overall agency development costs for new applications, as well as providing consistency between tools. These shared data services will support developer access to data and analytic capabilities in the platform. Services will be developed following RESTful conventions and provide metadata and

documentation, as appropriate. The contractor will be required to provide technical support to increase efficiency and reduce redundancy in the overall agency software development requirements.

4 Deliverables

The Contractor shall provide support services to that allow the EPA to implement its short and long-term goals. The following deliverables are required. The Contractor shall post proof of receipt of the deliverables shown below to GSA's online electronic contract file within GSA's AAS Business Systems Portal (AASBS) and IT-Solutions Shop (ITSS) invoicing system.

4.1 Monthly Status Report

The Contractor shall deliver a report which will:

- 1) Summarize accomplishments of the previous month, including all work products produced for the Government, the relation to the PWS and traceable to each service summary;
- 2) discuss major issues and/or concerns and proposed solutions, timetable and implementation plan for the issues:
- 3) provide any updates to the EPA and discuss and forecast new technology implementation and events that will be supported by the contractor. The report will close out on the last day of the contractor's monthly accounting period and be submitted no later than ten (10) calendar days after close of the contractor's monthly accounting period. The Monthly Status Report must be submitted prior to invoice posting.

4.1.1 Financial and task progress report

The contractor shall submit a combined financial and task progress report submitted on a monthly basis indicating, at a minimum the number of hours worked and monthly accomplishments for the reporting period. The contractor shall also provide a breakdown of costs associated with specific tasks or subtasks. This is necessary because funding will be from several different sources. In addition, a change control board meeting shall be instituted to take place every two weeks. This meeting will be held to report on issues, for technical direction approval, and progress for all activities covered under this task order. The contractor is required to attend. The meeting will be held at the contractor site unless indicated otherwise.

4.1.2 Delivery order report

The contractor shall produce standard delivery order reports, plus a monthly report, to be submitted within ten (10) working days after the close of the contractor invoice cycle, to consist of the hours worked, and a summary of the progress toward the completion of all requirements of the contract. This shall include current month data, as well as year-to-date data in both hours/dollars.

4.1.3 For Labor Hour effort

The contractor shall deliver a monthly Contract Funds Status Report. The report will close out on the last day of the contractor's monthly accounting period and be submitted no later than ten (10) calendar days after close of the contractor's monthly accounting period. This report shall: 1) summarize accomplishments of the previous month, 2) discuss major issues and/or concerns, 3) discuss new support needs, 4) summarize the current financial billing profile, including any projected shortfalls or under-runs, and 5) detail the monthly labor charges by individual for all direct labor, including the contractor, consultants and subcontractors, with cumulative totals by individual for all charges. The "by name" billing will include company name, labor category, hours billed, and address/place of business. The report will close out on the last day of the contractor's monthly accounting period and be submitted no later than ten (10) calendar days after close of the contractor's monthly accounting period.

4.1.4 For Travel CLIN

The Contractor shall submit in writing to the EPA COR requests for travel as required for performance. The Contractor shall not expend any funds (i.e., ODC) for travel without COR written or email approval in advance. The Contractor shall note the expenditure of travel funds in the monthly status reports. The Contractor shall limit chargeable travel expenses per the Federal Joint Travel Regulation (JTR).

Reimbursement for local travel to the Government EPA office building must be approved in advance by the COR.

4.1.5 For Other Direct Cost

The Government will establish a Not to Exceed amount for Other Direct Costs (ODC). The Contractor shall submit in writing to the EPA COR requests for ODC as required for performance. The Contractor shall not expend any funds for ODC without COR written or email approval in advance. The Contract shall submit receipts for all Cost Reimbursable items including the Amazon Web Services usage fees.

4.2 Monthly Project Management Review (PMR) Meeting

The Contractor's primary contract management representative shall meet with the Contracting Officer's Representative (COR) and the GSA Project Manager (PM) for status report meetings as per ordinary inspection rights. Unless otherwise arranged by the COR, the status report meetings will typically occur within 15 working days after the end of the previous month so that the COR can go over with the Contractor's monthly status report and deliverables under the contract, discuss and work to resolve any contract performance issues and to facilitate invoice and payment approval for the previous month's service support. A draft invoice will be provided to the COR at least 5 working prior to the PMR meeting. The monthly Project Management Review must occur prior to final invoice posting each month.

4.3 List of Deliverables with due date:

Task 3.1 Deliverables

 Project Management Plan 	Due 10 working days after receipt of order
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Change Control Board (CCB) Minutes
 Due 2 weeks after CCB

Monthly Management Reports including updated schedules
 Due 2 weeks after EOM

Quality Control Plan (QCP)
 Due within 20 days after receipt of order

Amazon Web Service Metrics
 Due monthly

Transition Plan
 Due 60 calendar days after award

Safety Plan
 Due within 30 days after receipt of order

Security Plan
 Due within 30 days after receipt of order

Task 3.2 Outreach

• Briefing/Demonstration/Poster Support Materials No more than 8

Within 1 month of Assignment

• Brochures in Support of Envirofacts Applications No more than 12

Within 1 month of Assignment

Training and Outreach Materials
 No more than 8

Within 1 month of Assignment

User Manuals (Training Support)
 No more than 8

Within 1 month of Assignment

Task 3.3 Deliverables

• Envirofacts & Related Applications No more than 20 (Optional +2)

Within 3 months of Assignment

• Data Services & Documentation No more than 25

Within 30 working days of Assignment

• Database Analytical Services & Documentation No more than 8 (Optional +2)

Within 30 working days of Assignment

• Databases/Datamarts/Data Lakes No more than 5 (Optional +1)

Within 40 working days of Assignment

Database Documentation/Metadata
 Monthly or as necessary

• Data Prep/Conversion No more than 8

Within 10 working days of Assignment

Task 3.4 Deliverables

• Web Service Schemas No more than 8

Within 10 working days of Assignment

• Data Services & Documentation No more than 20

Within 30 working days of Assignment

• Database Analytical Services & Documentation No more than 8 (Optional +2)

Within 30 working days of Assignment

Databases/Datamarts/Data Lakes
 No more than 5 (Optional +1)

Within 40 working days of Assignment

Database Documentation/Metadata
 Monthly or as necessary

Data Prep/Conversion
 No more than 10

Within 10 working days of Assignment

Facilitation of AWS Hosting
 No more than 3 programs applications

Data Analytics Applications
 No more than 10

Within 3 months of Assignment

Data Analytics Services & Documentation
 No more than 10

Within 30 working days of Assignment

Task 3.5 Deliverables

• GIS Applications and Documentation No more than 15 (Optional +2)

Within 3 months of Assignment

• GIS Data Services & Documentation No more than 40

Within 2 months of Assignment

Data Visualization Applications
 No more than 5 (Optional +3)

Within 3 months of Assignment

Data Visualization Services & Documentation
 No more than 10

Within 2 months of Assignment

Access/Reporting/Workflow/Analysis Applications
 No more than 15 (Optional +5)
 Within 3 months of Assignment

Mobile Applications
 No more than 5 (Optional +1)
 Within 2 months of Assignment

Task 3.6 Deliverables

Data Analytic Services & Documentation Optional
 Analysis & Visualization Applications Optional
 Shared Data Services Optional

4.1 Monthly Status Report Due prior to monthly invoice

4.2 Monthly Project Management Review Due prior to monthly invoice

(end of deliverables list)

5 Performance Requirements Summary (PRS) / Acceptable Quality Levels (AQLs)

Required Services		Performance	Acceptable Quality	Surveillance	
(Tasks)	Indicator	Standard	Level	Method	Incentive
(1000)					
			At least one (1) product or service, new and		
Product or Service Initiatives: Proactive in identifying, recommending, and implementing improvement and new ideas, initiatives, and	Contractor provides recommendations that are valuable	Recommendation is affordable, measurable and can	innovative tools and processes, business process improvement initiatives are identified and recommended to the Government for implementation	Periodic (submission of business process improvement report, Program Management Reviews); Monthly Status Report and Annual Summary	Monthly Evaluation, CPAR, Past
innovations	and measurable	be implemented	quarterly	Report	Performance
Quality of Product or Service: Contractor assures customer satisfaction	Quality, accuracy, timeliness	Satisfactory performance on a daily basis	No more than one (1) set of corrections required per month for any product provided and submitted within one (1) business day of suspense.	MSR, ASR, Customer Feedback and Complaint;	Monthly Evaluation, CPAR, Past Performance
Schedule: Services and deliverables are submitted on time	Timeliness, quality	Satisfactory performance on a daily basis		Feedback and Complaint; MSR; Periodic (COR to verify deliverables on a monthly basis);	Monthly Evaluation, CPAR, Past Performance
Training: Develop and provide user training	Quality, accuracy, timeliness	Training provided improves performance and understanding of software applications needed	Training provided is effective in getting more users on system	Email Notifications; MSR; ASR; Customer Feedback and Complaint; FM Systems SharePoint	Monthly Evaluation, CPAR, Past Performance

Required					
Services		Performance	Acceptable	Surveillance	
(Tasks)	Indicator	Standard	Quality Level	Method	Incentive
			Camtractor		
Management of Personnel: Measuring customer daily requirement for support; measuring effectiveness and number of user calls	Contractor response time, Availability, Backup system	Staffing and Responsiveness; Tracking customer support required during work week. Goal is to measure the number and type of customer support problems reported each day.	Contractor must track type and number of support calls received and number resolved each day and changing hours if needed to support the maximum number of users each day.	Contractor will report support desk manning and usage each week.	Monthly Evaluation, CPAR, Past Performance
Management of Personnel: Maintain support continuity with no mission impact	Customer Satisfaction, Reliability	Staffing and Responsiveness	Maintain continuity of support with no mission impact. Workforce changes from Task Order Management Plan (TOMP) are in place within five (5) business days.	Customer Feedback and Complaint	Monthly Evaluation, CPAR, Past Performance
Project Staffing	Speed, technical expertise, currency and effectiveness of personnel assigned	Contractor recommendations to resolve customer issues demonstrate the necessary expertise to resolve issues quickly	Recurring technical issues are resolved quickly, often immediately.	Contractor will report time required to resolve technical issues.	Customer Satisfaction Surveys, Monthly Evaluation, CPAR, Past Performance

Required Services		Performance	Acceptable Quality	Surveillance	
(Tasks)	Indicator	Standard	Level	Method	Incentive
,					
Compliance of					
Security			Zero security		
Requirements:			violations and Zero	Periodic (COR to	Monthly
Comply with			internal Classified	verify with Security	Evaluation,
security	Critical Security		Message Incident	Office on a monthly	CPAR, Past
requirements	Requirements	Security	(CMI) per year.	basis)	Performance
			Not more than two		
		Final Deliverables	deliverables can		
		submitted by due	be submitted late		
Final Deliverables	Timeliness,	date and with zero	or with errors	Periodic inspection,	
(not draft)	accuracy, quality	errors	monthly	daily review	CPAR
		Reports submitted	Not more than one		
Monthly Progress	Timeliness,	on time, PMR	error on report per		
Report	accuracy, quality	schedule	month	100% review	CPAR
		Customer questions	Not more than 2		
Application	Customer	must be resolved	complaints per		
Support Customer	l '	effectively and	month; Metrics	Customer	
Assistance	Effectiveness	efficiently	updated monthly	satisfaction survey	CPAR
		Efficient and			
		effective in meeting			
		requirements.			
	Customer	Provides quality			
	Satisfaction,	service and	Not more than 2		
	Effectiveness,	products; Provides	complaints per		
	Efficiency,	valuable	month; Metrics	Customer	
Technical Needs	timeliness	recommendations	updated monthly	satisfaction survey	CPAR

6 Government Furnished Property (GFP)

6.1 Equipment

The Government will provide personal identity verification (PIV) cards, email accounts and entrance badges for off-site work and on-site meetings. All GFE is provided for and shall be to support performance of official Government business. All equipment and badges shall be returned upon separation or when the task ends. The Government may provide Government laptops in order to access secured EPA data.

6.2 Materials, Facilities

The Government will provide materials and facilities for work performed at the Government site.

6.3 Information

All Government information must be protected and returned when the task order ends.

6.4 Training

The Government does not anticipate the need to provide training.

7 Contractor Furnished Property (CFP)

7.1 Equipment, Materials, Facilities

The Contractor shall provide all equipment, materials and facilities for work performed offsite.

7.2 Information

The contractor shall prepare presentation materials, special technical reports, research, recommendations and/or papers as requested, and provide the Government with copies of all materials presented at the meetings. This information shall be delivered to the Government as Technical Reports, Presentation Materials, or Conference Minutes, or other format as required by the Government. The Government will acquire unlimited data rights for all documentation delivered or otherwise provided to the Government during the performance of this task order. As such, the Government is the sole owner of all technical report, conference/meeting minutes, training and presentation materials (to include digital, hardcopies, and multimedia), tools, publications, and data produced on this contract. Once submitted, this information is considered Government-owned, and subject to Government dissemination decision. All Government provided information will be returned to the Government when the task ends.

7.3 Training

The Contractor is financially responsible for all contractor employee training and certifications.

8 Agency Unique Requirements

8.1 Kick off meeting

A post award kick-off meeting will be held at the EPA office in Washington DC.

8.2 Release of information

This effort requires that the Contractor have access to Proprietary, Company Sensitive and For Official Use Only (FOUO) information/material. The Contractor shall not release to anyone any unclassified information, regardless of medium (e.g. written, film, tape, document, etc.), pertaining to any part of this contract or any program related to this contract. Work on this project will require that personnel have access to Privacy and other sensitive information. Personnel shall adhere to the Privacy Act, Title 5 of the United States Code, section 552a and applicable EPA and GSA rules and regulations. Contractor personnel shall not divulge or release privacy data or information developed or obtained in the performance of task orders until made public or specifically authorized by the Government. The Contractor shall not use, disclose, or reproduce third party companies' proprietary data, other than as authorized and required in performance of task orders.

8.3 Non-disclosure

All personnel working on this project will be required to sign a non-disclosure agreement immediately upon their start on the project. Work on this project requires that personnel have access to information relating to systems being developed that are Contractor propriety or official government "For Official Use Only" (FOUO) sensitive information. The data processed within EPA and GSA offices is considered proprietary and/or sensitive and therefore cannot be used to solicit or benefit other work by the contractor. The Contractor shall agree to and sign a non-disclosure form prohibiting release of any sensitive FOUO or Contractor propriety data that any personnel associated with this task may encounter. All records received, created, used, and maintained by the Contractor for this effort shall be protected as sensitive data, in accordance with Government laws, to include the Federal Acquisition Regulation (FAR) Part 24 and shall be returned and provided to the Government upon contract completion. All data created for Government use and delivered to, or falling under the legal control of the Government are Federal records and shall be managed in accordance with records management legislation as codified at 44 U.S.C. Chapters 21, 29, 31, and 33, the Freedom of Information Act (5 U.S.C. 552), and the Privacy Act (5 U.S.C. 552a), and shall be scheduled for disposition in accordance with 36 CFR 1228. As prescribed in FAR 24.104, under the Privacy Act Notification Clause (Apr 1984) the Contractor shall comply with clauses 52.224-1 and 52.224-2. The COR shall specify the delivery to the Government of all data needed for the adequate and proper documentation of contractor-operated programs in accordance with record keeping requirements of 36 CFR Chapter 12, section 1222.48 and with requirements of the FAR.

8.4 Organizational Conflict of Interest

Contractor and Subcontractor personnel performing work under this contract may receive, have access to or participate in the development of proprietary or source selection information (e.g., cost or pricing information, market research report materials, budget information or analyses, specifications or work statements, etc.) or perform analysis or evaluation services which may create a current or subsequent Organizational Conflict of Interests (OCI) as defined in FAR Subpart 9.5. The Contractor shall notify the Contracting Officer immediately whenever it becomes aware that such access or participation may result in any actual or potential OCI and shall promptly submit a plan to the Contracting Officer to avoid or mitigate any such OCI. The Contractor's mitigation plan will be determined to be acceptable solely at the discretion of the Contracting Officer and in the event the Contracting Officer unilaterally determines that any such OCI cannot be satisfactorily avoided or mitigated, the Contractor from participation in subsequent contracted requirements which may be affected by the OCI.

8.5 Sensitive Information Storage

Sensitive but Unclassified (SBU) information, data, and/or equipment will only be disclosed to authorized personnel on a need-to-know basis. The Contractor shall ensure that appropriate administrative, technical, and physical safeguards are established to ensure the security and confidentiality of this information, data, and/or equipment is properly protected. When no longer required, this information, data, and/or equipment will be returned to Government control, destroyed, or held until otherwise directed. Destruction of items shall be accomplished by tearing into small parts, burning, shredding, or any other method that precludes the reconstruction of the material. All sensitive information contained on Contractor computers shall be either degaussed or shall use the Department of Defense method of a three time overwrite of the sensitive data. The disposition of all data will be at the written direction of the COR, this may include documents returned to Government control; destroyed; or held as specified until otherwise directed. Items returned to the Government shall be hand carried or sent by certified mail to the COR.

8.6 Protection of Information

The Contractor shall be responsible for properly protecting all information used, gathered, or developed as a result of work under this task order. The Contractor shall also protect all Government data, equipment, etc. by treating the information as sensitive. All information about the systems gathered or created under this task order should be considered as Sensitive But Unclassified (SBU) information. It is anticipated that this information will be gathered, created, and stored within the primary work location. If Contractor personnel must remove any information from the primary work area they should protect it to

the same extent they would their proprietary data and/or company trade secrets. The use of any information that is subject to the Privacy Act will be utilized in full accordance with all rules of conduct as applicable to Privacy Act Information. The Government will retain unrestricted rights to Government data. The ordering activity retains ownership of any user created/loaded data and applications hosted on vendor's infrastructure, as well as maintains the right to request full copies of these at any time. The data must be available to the Government upon request within one business day or within the timeframe specified otherwise, and shall not be used for any other purpose other than that specified herein. The Contractor shall provide requested data at no additional cost to the government. No data shall be released by the Contractor without the consent of the Government in writing. All requests for release must be submitted in writing to the COR and GSA Contracting Officer.

8.7 Return all Government data

The preliminary and final deliverables and all associated working papers and other material deemed relevant by the agency that have been generated by the Contractor in the performance of this task order, are the property of the U.S. Government and must be submitted to the COR at the conclusion of the task order. All documents produced for this project are the property of the U.S. Government and cannot be reproduced, or retained by the Contractor. All appropriate project documentation will be given to the agency during and at the end of this task order. The Contractor shall not release any information without the written consent of the Contracting Officer.

8.8 Section 508 Compliance Requirements

Software development under this agreement shall follow EPA's Accessibility and Section 508 Guidance - https://www.epa.gov/accessibility/section-508-standards.

8.9 General Compliance Requirements

GSA and EPA information systems are the property of the Government. The Contractor shall be responsible for adhering to all aspects of the Privacy Act and is prohibited from removing from the worksite any programs, documentation, or data without the knowledge AND written approval of the Contracting Officer. The Contractor and Subcontractors must insert the substance of this section in all subcontracts.

8.10 Safeguarding Sensitive Data and IT Resources

The following language is included in this solicitation and the resultant task order, as this procurement may require Contractors access to sensitive data, or use IT resources. In accordance with FAR 39.105, this section is included in the contract. This section applies to all users of sensitive data and IT resources, including awardees, Contractors, Subcontractors, lessors, suppliers and manufacturers. The EPA's environmental databases, applications and systems are a primary resource of the United States and appropriate protection of their integrity, confidentiality and availability is an absolute necessity. The Contractor shall ensure that work performed under this task order does not compromise the security of these systems or data contained therein, and shall execute a security program that protects their integrity, confidentiality and availability consistent with EPA security policy. Any security breach shall be identified, closed, and reported in accordance with established EPA policies and procedures at the earliest time possible. The contractor staff must be fully aware of and liable for unauthorized access by their staff. The contractor shall defend against this type of unauthorized access through policy and technical means, including securing appropriate background checks to help ensure trustworthiness of contractor employees.

8.11 Intellectual Property

The United States Government funds this contract. All intellectual property generated and/or delivered pursuant to this PWS will be subject to appropriate federal acquisition regulations which entitle the Government to: unlimited license rights in technical data and source code furnished during the performance of the contract; a nonexclusive "paid-up" license to practice any patentable invention or discovery made during the performance of this contract; and a "paid-up" nonexclusive and irrevocable worldwide license to reproduce all works (including technical and scientific articles) produced during this contract.

8.12 Central Contractor Registration

Contractor must be registered on the DOD's Central Contractor Registry (CCR) system (http://sam.gov). Contractors shall use the SAM electronic systems for the submission of Representations and Certifications https://www.sam.gov/. Dun and Bradstreet Number (DUNS) and Tax Identification Number (TIN) shall be provided in the quote.

8.13 The mandatory EPA Cyber Security Checklist is included in the Appendix section.

9 General Considerations

9.1 Working Group Meetings, Government Team Meetings, Project Management Review Meetings The Contractor shall organize and participate in planning meetings and working groups with government and contractor organizations. The Contractor shall prepare briefings, special technical reports or papers to support these meetings, and provide the Government with copies of all materials presented at technical interchange and working group meetings. This information shall be delivered to the Government as either Technical Reports or Presentation Material and Conference Minutes, whichever is more appropriate.

9.2 Training

The Contractor shall be responsible for the employment, training, guidance and supervision of personnel assigned to perform tasks under this contract. These personnel must have expert knowledgeable of applicable guidance. The contractor shall provide personnel that meet the experience requirements and are appropriate to the assigned tasks.

9.3 Other Direct Costs

The Contractor shall provide and track Other Direct Costs as Cost Reimbursable items on a monthly basis for Travel and Amazon Web Services.

9.4 Travel

The Government shall establish a Not to Exceed CLIN for travel. All travel must be approved in advance by the COR. The Government anticipates travel including but not limited to the following: biannual travel for two experts to go to EPA's National Computer Center (NCC) in RTP, NC (estimate \$1200 per person) plus one GIS expert to travel annually to ESRI's Developer Summit in Palm Springs, CA (estimate \$2500), plus one expert annually to participate at ESRI's International User Conference in San Diego (estimate \$3500), plus one GIS expert to travel annually to deploy a NEPAssist update internationally, plus travel to support emergency response efforts, as needed, for a Total Estimate Not to Exceed \$7,500.00. Reimbursement for local travel to the Government EPA office building must be approved in advance by the COR.

9.5 Amazon Web Services

The Government shall establish a Not to Exceed CLIN for Cloud Services and software required to maintain the existing services. Contractor shall include the receipts for cost reimbursable services in the monthly invoice. The Government anticipates a maximum of \$6,000 per month for these services, though this amount may increase based on usage of the AWS services to support varying project requirements.

9.6 GSA Invoicing Requirements

9.6.1 Documentation Submission

GSA Assisted Acquisition Services (AAS) uses an online Electronic Procurement System called GSA ASSIST. The GSA AAS Business Systems Portal (AASBS) and IT-Solutions Shop (ITSS) website will be used in the administration of this contract. This web-based system (https://portal.fas.gsa.gov/group/itss-portal/welcome) shall be used by the Contractor to upload monthly status reports, including invoices, financials, deliverables, response to inquiries and narratives. These monthly status reports must be submitted to the Client Representative via ITSS no later than the 10th workday of every month. The Client Representative will review these reports and will accept or reject Contractor services or deliverables via ITSS, which is the basis for payment to the Contractor (invoices will not be paid without an acceptance in ITSS). Billing and payment shall be accomplished in accordance with the task order and submitted to

GSA electronically on ITSS. The contractor's invoice will be for one month, for services performed in the previous month. The contractor may invoice only for the services ordered by GSA and actually used in direct support of the awarded task order. All invoicing will be done electronically under ITSS and GSA Finance. Password and electronic invoice access may be obtained through GSA web site www.finance.gsa.gov. A copy of the invoice will be submitted to the designated COR and GSA PM along with the monthly status report, at the same time that it is submitted for payment. Failure to comply with the procedures outlined above may result in your payment being delayed. Invoices for final payment must be so identified and submitted when the task has been completed and no further charges are to be billed. Final invoices shall be submitted no later than 90 days after completion of this task order.

For travel invoices, the Contractor shall attach a detailed description of the total amount charged and individual charges, the receipts for all items over \$25.00 and a copy of the travel approval that was signed before the travel occurred. Release of Claims (ROC) - Invoices for final payment must be so identified by a ROC letter and submitted when the task order has been completed and no further charges are to be billed. The invoice must be marked with the word "FINAL" (even if it is a zero amount). Invoices should be structured and organized to logically follow the CLINs and Tasks. Invoices should separate out work performed for each Task in each CLIN. Work performed in Sub Tasks may also need to be separated out for increased clarity as determined by the COR.

9.6.2 Contractor Responsibilities to Receive Payment:

Contractor must first provide invoices and a completed GSA Form 3025 – Receiving Report to the Government COR for review prior to submitting invoices in ITSS or GSA Finance. The COR will return either an approved GSA Form3025 or a detailed explanation as to why the invoice was not approved within 5 business days. It is the responsibility of the contractor to resolve issues in a timely manner. Contractor shall submit the approved invoice and the signed GSA Form 3025 into the Central Invoicing System in ITSS. The Monthly Status Report is to be submitted into the Reports section of ITSS for this task. Contractor shall reference the ACT number when submitting requests for client acceptance. A Monthly status report must accompany the approved invoice and Form 3025 in ITSS. Failure to comply will result in automatic invoice rejection. If an invoice is rejected, it is the responsibility of the contractor to notify the GSA Project Manager so that issues can be resolved in a timely manner.

9.7 Monthly Payments

This contract is a labor hour and cost reimbursable contract. The Government shall pay the Contractor, upon the submission of proper invoices or vouchers, the prices stipulated in this contract for services rendered and accepted, less any deductions provided in this contract. Acceptance criteria shall be in accordance with the Performance Based criteria listed in the PWS. Unless otherwise specified in this contract, payment shall be made on partial deliveries accepted by the Government if-

- (a) The amount due on the deliveries warrants it; or
- (b) The Contractor requests it and the amount due on the deliveries is at least \$1,000 or 50 percent of the total contract price.
- (c) The Government anticipates that invoicing will be on a monthly basis based on the period of performance.

9.8 Personal Service

The Client has determined that use of the GSA contracts to satisfy this requirement is in the best interest of the Government, economic and other factors considered, and this contract is not being used to procure personal services prohibited by the Federal Acquisition Regulation (FAR) Part 37.104 titled "Personal Services Contract".

10 Workload for All Specific Task Areas (Historical / Projected)

10.1 Historical

Required technical skills and daily software used.

Task order ID09180089 is a performance based effort. The Government relies on the Contractors experience and expertise to determine and recommend the most efficient and effective staffing mix to propose. Historical data is provided solely to assist the contractor pool in determining whether they have the capability and expertise required to propose a solution.

Historically, the Government has used both the GSA Alliant GWAC and GSA's Information Technology (IT) Schedule 70 Multiple Award Schedule (MAS) to secure this type of contracted support.

The following mix of database management, web-based applications, Geographic Information System (GIS), data management, data science, cloud architecture, DevOps and mobile application development expertise are considered the minimum required of the contractor's staff in order to complete the work describe in the performance work statement. Because this work is ongoing and continuing it is imperative that contractor personnel already have the programmatic expertise and technology skills required to complete this work.

The purpose of this information is to show how the EPA uses these applications within their work environment. The paragraphs below describe the technical work required and NOT the skill level type or the number of skill levels required for a given area.

Geographical Information System Data Management Expertise -

Demonstrated expertise integrating Oracle Spatial and ESRI (ArcSDE) spatial data management tool and multiple spatial data construct within a shared enterprise system, e.g. procedure and jobs developed to automatically refresh data and to provide spatial analysis such as proximity and intersection used by a variety of applications. Demonstrated expertise in processing US Census data including Census 2000, Census 2010, and the latest ACS data along with creation of derived demographic data sets to support applications such as EJSCREEN. Demonstrated expertise in developing tribal boundary dataset based on Census and BLM tribal data to enhance database queries with tribal boundaries. Expertise in integrating Census, NOAA, USGS, CDC, BTS and other data with a variety of applications. Expertise using ESRI's GIS tools for Hadoop for large data processing.

Geographical Information System (GIS) Lead/System Architect Expertise Demonstrated expertise with geospatial architecture, GeoPlatform and geospatial services.
Demonstrated geospatial expertise ranging from server products including Portal for ArcGIS Server,
ArcGIS GeoAnalytics Server, ArcSDE, and Oracle Spatial along with the desktop product
of ArcGIS desktop. Demonstrated expertise with the web mapping products including Microsoft Bing
Maps, Google Maps, ArcGIS API for Java Script and ArcGIS REST API. Demonstrated expertise with the
development and integration of GIS widgets and services based on ArcGIS API for JavaScript for web
based applications and with creating templates for the GeoPlatform. Expertise integrating geospatial web
services including ArcGIS Server REST WMS, WFS, KML and GeoRSS feeds in web applications and
integrating remote web services (spatial and non-spatial) with geo analytical services. Demonstrated
expertise with architecting applications similar to the EnviroMapper series of applications. Expertise in
providing solutions for mapping large volumes of geospatial data.

Geographical Information Application Expertise -

Demonstrated expertise with the design and development of geospatial applications ranging from server products of ArcGIS Server, ArcIMS, ArcSDE, and Oracle Spatial along with the desktop products of ArcGIS Desktop. Demonstrated expertise developing and implementing web mapping products including Microsoft Bing Maps API, Google Maps API, and ArcGIS API for JavaScript and ArcGIS REST API. Demonstrated expertise in incorporating remote and local web services, creating geoprocessing and analytic services, and enabling generic web services as ArcGIS REST services. Demonstrated expertise with the development and integration of GIS widgets and services based on ArcGIS API for Java Script within EPA web based applications and with creating templates for the GeoPlatform. Demonstrated expertise with developing EnviroMapper type series of applications, including expertise with the development and implementation of geospatial web services including ArcGIS Server REST, ArcIMS services, WMS, WFS, KML and GeoRSS in web applications. Demonstrated expertise extending ArcGIS

Server through Server Object Extension (SOEs) and Server Object Interceptors (SOIs). Demonstrated expertise with enabling Microsoft Office to query EPA databases and map the query results with ArcGIS Maps for Office and publish the results to the GeoPlatform.

Senior Application Expertise -

Demonstrated expertise in full life cycle design, development, development and enhancements of application technologies including full cycle Java J2EE development within an Agile environment. Demonstrated expertise with Spring Boot, Spring Cloud, Spring MVC, Servlets, JSP, JQuery, HTML5, Thymeleaf, Webpack, Karma, nodeJS, and AngularJS. Demonstrated expertise with object relational mapping (ORM) tools such as Hibernate or IBatis; demonstrated expertise in environments supporting RDBMS data bases such as ORACLE, SQL Server, and MySQL. Expertise in developing web services using REST, expertise with Solr and Elasticsearch in developing near real time indexing, dynamic clustering and database integration. Expertise in cloud architectures in various cloud environments including AWS and Azure. Expertise in cloud deployment models such as PCF. Expertise in Big Data technologies including noSQL databases, Hadoop and Microservices. Demonstrated expertise in data science technologies such as Spark, NLP, and Machine Learning. Expertise in visualization technologies such as QlikSense, Tableau, and PowerBI.

Senior Database Expertise -

Expertise in full life cycle design, development, and deployment and enhancement of database environments including Oracle RDBMS, PostgreSQL, SQL Server, and MySQL. Expertise in NoSQL design, development, and deployment including Hadoop/HBase, MongoDB, Neo4J, and Titan. Expertise in cloud data storage including AWS S3. Demonstrated data modeling capabilities and implementation. Requirement to understand complex business rules and translate them into data/database design. Strong data analysis capabilities. Create and implement complex SQL, PL/SQL packages, procedures, functions, triggers and spatial queries. Ability to observe data security as well as monitor and manage continuity and performance of application code and databases. Expertise with setting up new databases and monitoring database efficiency. Demonstrated ability to create API services into the database creating REST endpoints for users and applications to utilize. Knowledge of scripting to create automated scripts for refreshing database resources on a scheduled cycle.

Senior Collaboration Software Expertise -

Demonstrated expertise in design, development, and deployment of user interface collaboration applications, e.g. workflow, collaborative management of task and document within a knowledge-based business process including MS Office 365 SharePoint. Demonstrated expertise in providing customizations and in provisioning and maintenance of new site. Demonstrated expertise in design, development, deployment and enhancement of mobile application technologies, including iOS and Android with Spring MVC, Spring Data, jQuery Mobile, Phone Gap, Swift, and the Amazon Cloud. Demonstrated expertise developing and implementing geolocation, storage/personalization and mapping functions. Demonstrated expertise with email, mobile camera, AJAX, and server synchronization. Demonstrated expertise with integrating social media products, e.g. Facebook, within applications.

Senior Data Scientist Expertise -

Demonstrated expertise in developing data pipelines for streaming and batch processing for cleansing / standardizing / normalizing / enriching incoming datasets and performing complex analyses on these data to glean new insights. This includes use of statistical methodologies and machine learning as well as working with other team members and SMEs on spatial analysis, whether point, vector or raster based. Understanding of SQL, Python, and other languages to support code development, as well as an understanding of Apache Spark and techniques for scalable, distributed computing.

Senior Cloud Architect Expertise -

Demonstrated expertise in developing scalable and robust cloud environments to support data analysis and processing. This includes a robust understanding of cloud scalability and ability to work with team members toward robust load balancing, services optimization such as API caching and microservices approaches. The cloud architect will also need robust understanding of cloud security, identity and access management to ensure FISMA 800-53 and EPA requirements are met. The cloud architect

should have a solid understanding of CSP compute instance types and pricing models for optimizing strategies, and logging and automation techniques for management of cloud resources. Also includes understanding of compute strategies relative to containerization and serverless technologies like Lambda and how these can support data science and enterprise-scale applications. Cloud Architect will coordinate closely with EPA OEI OITO and ODSTA staff on approaches for cloud implementation, and will identify areas for process and policy improvement to aid with implementation.

Senior DevOps Expertise -

Demonstrated expertise in leveraging tools and technologies to optimize applications deployment and automation. Understanding of technologies such as Git, Docker, Atlassian suite and others. The DevOps expert will also have a strong understanding of microservices and will be able to engage and make recommendations on development and modernization efforts. EPA currently lacks many other components of a DevOps stack to support Continuous Integration / Continuous Deployment (CI/CD) but it is anticipated that tools will be acquired in coordination with EPA's Office of Digital Services and Technical Architecture within OEI and others, and the DevOps expert will work with teams toward identifying opportunities and areas for process and policy improvement, and developing recommendations where appropriate, along with implementing an approach and workflow that leverages these tools and processes.

Agile Development Expertise -

The Project Management Institute Agile Certified Practitioner (PMI-ACP) can be used to show expertise in the Agile Development area.

10.2 Projected Workload

10.2.1 Modernization Plan

The EPA is completing Phase 2 of the chart below, which will include the Lift and Transform of Envirofacts.

Envirofacts Modernization Plan

Epics	Series of six 2-week sprints	Series of 2-week sprints	Series of 2-week sprints
	Phase 1	Phase 2	Phase 3
UI [Create EDAP Dashboard and Deploy on Qlik Production Server Refine UI Filtering	Multisystem Reports	Provide EF Program Reports –Included in Update apps Estimate Below
Services Search Data & Docs API Strategy	Refine Search, Prepare Initial Indices for Imported Data Microservices - Create New APIs for Indices	• Refine Search	Refine Search Update Apps
Data Enriched Integrated Data, Docs, Program Data, and External Data	Import EF Data * Geospatial Integration Lat/Long Verification		Data Update Routines
Other Workspace for program **	Integration Testing Deploy Beta to AWS Platform	Deploy Beta Lift & Transform to AWS	Deploy Beta to AWS
Ξ.	ECHO (the echo exporter file) - IGMS - RCRAIN ICIS-AIR - LRT - SDWIS	- TRI	EDAP, Jupyter Hub, Qlik, etc.

List of Appendices:

Appendix A - Software Components Utilized within the GAVETS Task Order

Appendix B – EPA Systems and Applications within the GAVETS Task Order

Appendix C - Amazon Cloud Solution

Appendix D - Sample Metrics and System Support Data

Appendix E – Acronyms for the GAVETS Task Order

Appendix F - Cybersecurity Tasks Checklist

Appendix G - Non Disclosure Agreement

Appendix A - Software Components Utilized within the GAVETS Task Order

The following commercial software is utilized or may be utilized for the different components of the task:

AngularJS/TypeScript/Karma/Bower/Gulp/NodeJS
Adobe Flex
AJAX
Amazon Web Services (AWS)
Android Studio
Angular JS
Apache Cordova for iPhone and Android
Apache Spark
Apache Tomcat
Apache Web Server
Apple Xcode
ASP.NET
Athena
Atlassian Suite
AWS API Gateway
AWS Glacier
AWS Simple Storage Service (S3)
Bash
Bing Maps Application Programming Interface
Blog (WordPress)
C#
Callimachus
Cloudera
Docker
Drupal
Eclipse
Elastic Compute Cloud (EC2)
Elastic Container Service (ECS)
Elastic MapReduce (EMR)
Elasticsearch
ESRI REST API
ESRI Arc Spatial Database Engine
ESRI ArcGIS
ESRI ArcGIS Desktop
ESRI ArcGIS GeoEvent Server
ESRI ArcGIS Online
ESRI ArcGIS Python API
ESRI ArcGIS Server
ESRI JavaScript API
ESRI Web AppBuilder for ArcGIS
Extensible Markup Language (XML)
Extensible Stylesheet Language (XSL)
Extensible Stylesheet Language Transformations (XSLT)
Flex Viewer
Git / Github
Google Analytics Premium
Google Charts
Google Charts Google Charts API
Google Earth
Google Earth API
Google Earth AFI

Google Maps
Google Maps API
Hadoop
Hadoop Distributed File System (HDFS)
HBase
Highcharts
Hive
HTML
HTML5/Bootstrap
Impala
Informatica Extract, Tranform, and Load (ETL)
Internet Information Services (IIS)
IText-Portable Document Format generation
Jasper Reports
JAVA (Spring Framework, Hibernate)
JAVA Blackberry
JAVA Runtime Énvironment 7
JAVA Software Development Kit Android
JavaScript
Jenkins
JQuery
jQuery Mobile for iPhone and Android
JSON
Jupyter Notebook/JupyterHub
Keyhole Markup Language (KML)
Lambda
Leaflet
Linked Open Data
Media Wiki
Microsoft (MS) Azure Active Directory (AD)
Mobile Web
MongoDB
MS Azure
MS Azure App Service
MS Azure SQL
MS Office 365 Exchange/Outlook
MS Office 365 Office Apps
MS Office 365 SharePoint
MS Power BI
MS SQL Server
MySQL RDBMS
Neo4J
ngix
Objective C (iPhone apps)
Oracle Application Server
Oracle Business Intelligence Enterprise Edition (OBIEE)
Oracle Internet Access Manager
Oracle PL/SQL
Oracle Product Suite
Oracle Relational Database Management System (RDBMS)
Oracle Spatial
Pentaho
Pentaho Data Integration (ETL)
. ontaine Data integration (ETE)

PHP
Pig
PowerShell
Python (including ESRI ArcPy)
Qlik Sense
R / RStudio
RSS
Sesame
SharePoint 2010 and 2013
SPARQL
Splunk
SQL Lite
Sqoop
Swagger
Tableau
TitanDB
Titanium Appcelerator iPhone and Android
VB.Net
Visual Studio
VMWare
Webgate
Windows Server 2008, 2012, and 2016

Appendix B – EPA Systems and Applications within the GAVETS Task Order

The following is a list of EPA systems and applications that may be supported and/or maintained within the GAVETS task:

Application	Hosting Location	Application Owner	How to Access	Availability
Case Application for Debarment and Suspension (CADS)	EPA's National Computer Center in RTP	EPA	Web Browser	Intranet
ChemView	EPA's National Computer Center in RTP	EPA/OCSPP	Web Browser	Public
CIS New Chemicals Review (NewChemReview)	EPA's National Computer Center in RTP	EPA/OCSPP	Web Browser	Public
EPA Action Management System (EAMS)	EPA's National Computer Center in RTP	EPA/OP	Web Browser	In Development
EF 2.0	Amazon Cloud / Under Development	EPA/OEI	Web Browser	In Development
EJSCREEN	EPA's National Computer Center in RTP	EPA/OECA	Web Browser	Public
Emergency Response Dashboard	EPA's National Computer Center in RTP	EPA/OLEM	Web Browser	Intranet
Envirofacts	EPA's National Computer Center in RTP	EPA/OEI	Web Browser	Public
EPA GeoPlatform	EPA's National Computer Center in RTP	EPA/OEI	Web Browser	Intranet
EDAP	Amazon Cloud / Under Development	EPA/OEI	Web Browser	In Development
Integrated Contracts Management System	EPA's National Computer Center in RTP	EPA	Web Browser	Intranet
Linked Open Data	Amazon Cloud	EPA/OEI	Web Browser	Public
AirNow Mobile App	iTunes and Google Play Stores	EPA/OAR	iPhone, iPad, or Android Device	Public
Indoor airPLUS Mobile App	iTunes and Google Play Stores	EPA/OAR	iPhone, iPad, or Android Device	Public
myRTK Mobile App	EPA's National Computer Center in RTP	EPA	Mobile Web App	Public
UV Index Mobile App	iTunes and Google Play Stores	EPA/OAR	iPhone, iPad, or Android	Public

MyEnvironment	EPA's National Computer Center in RTP	EPA/OEI	Device Web Browser	Public
MyProperty	EPA's National Computer Center in RTP	EPA/OEI	Web Browser	Public
NEPAssist	EPA's National Computer Center in RTP	EPA/OECA	Web Browser	Public & Extranet
NEPAssist Regional Versions NEPAssist International	Regions 1, 2, 3, 4, 5, 6, 8, 9, and 10 Deployed in Multiple Countries	EPA/OECA & Regions EPA	Web Browser Web Browser	Intranet Varies – Public &
Performance Management Dashboard	EPA's National Computer Center in RTP	EPA	Web Browser	Intranet Intranet
Region 4 Watershed Index Tool	Desktop Application – Can be Downloaded from EPA's NCC	EPA/Region 4	Desktop Based Using Web	Public
Salmon Mapper	EPA's National Computer Center in RTP	EPA/OPPT	Services Web Browser	Public
School IAQ Assessment Mobile App	iTunes and Google Play Stores	EPA/OAR	iPhone, iPad, or Android Device	Public
SEGS	EPA's National Computer Center in RTP	EPA/OEI	Web Browser	Public & Intranet
SharePoint Applications	EPA's National Computer Center in RTP	EPA/OEI	Web Browser	Intranet
Urban Waters Mapper	EPA's National Computer Center in RTP	EPA/OW	Web Browser	Public

Appendix C - Amazon Cloud Solution

The following areas and services are currently utilized from the Amazon Cloud Solution in support of EDAP. The Contractor shall be required to update this list monthly.

	AWS Lambda
	Amazon Simple Storage Service
	Amazon RDS Service
	Amazon QuickSight
	Amazon Elastic Compute Cloud
	Amazon Simple Notification Service
	AmazonCloudWatch
	Amazon Elastic File System
	Amazon Virtual Private Cloud
	Amazon Simple Email Service
	AWS Directory Service
	Amazon DynamoDB
	Amazon EC2 Container Registry (ECR)
	Amazon Route 53
	Amazon Elasticsearch Service
	AWS CloudTrail
	AWS Key Management Service
П	AWS Flastic BeanStalk

Appendix D - Sample Metrics and System Support Data

The information provided in Appendix D shows user statistics for several products. On a monthly basis, the Contractor shall be required to update the Envirofacts REST APIs and provide additional metrics to show the systems use and customer access.

GAVETS Applications & User Statistics

The multiple applications and services provided under GAVETS support a variety of users including the:

- General Public and News Media To leverage applications to help assess the quality of their surrounding environment;
- Educational Community To find, map and analyze different types of data for research and course work;
- Business/Professional Community To cite as a resource for environmental records;
- EPA Applications and Emergency Response Supports a host of other EPA applications, including emergency response (eg. 2011 Fukushima radiation data reports, 2005 Hurricane Katrina Response, World Trade Center Response 2001)
- Federal, State, Tribal, and local agencies For assistance with environmental reviews.

Application Users	Envirofact s Database	Envirofact s REST APIs	Envirofact s Web Site	EJSCREE N	Emergency Operations Center Dashboard	MyEnvironment	NEPAssi st
Public	✓	✓	✓	✓		✓	✓
Federal,	✓	✓	✓	✓		✓	✓
State, Tribal,							
& Local							
Agencies	,				ED.4	,	,
EPA	✓	✓	Supports	✓	EPA	✓	✓
Program Offices and			12 EPA		Headquarters		
			Offices in 7 AA-ships		Emergency Operations		
Regions			including 28 EPA Program Data Streams		Center (EOC) - Available 24 hours per day - Shows live events		
Educational Community	✓	✓	✓	✓		✓	✓
Monthly	17.5	3.265	5.5 Million	60,475	Used as	Approximately	10,000
Usage	Million	Million	Website	Page	Needed,	100,000 Page	Page
Statistics	Data	Data	Hits per	Views	Based on	Requests per	Requests
	Requests	Requests	Month	(Decembe	Incidents and	Month	April 2018
	per Month	February		r 2017)	Emergency		
		2018			Events		

^{*}Monthly User Statistics for select GAVETS applications.

Application Descriptions

Envirofacts supports the Agency's goal of transparency and improved public access through the suite of Envirofacts website search tools, and its underlying Envirofacts Database Warehouse, thereby providing the public with a single point of access to EPA information about environmental activities that may affect

air, water, and land anywhere in the United States. Examples of this data content and accessibility in Envirofacts include Environmental Radiation Data documenting the occurrence of environmental radioactivity collected in air, precipitation, drinking water and milk samples from monitoring sites around the country; UV Index data to support EPA's SunWise Program which is aimed at teaching its users how to protect themselves from overexposure to the sun; Toxic Release Inventory (TRI) data, which tracks the management of certain chemicals by certain industry sectors that manufacture, process, or otherwise use these chemicals in amounts above established levels that pose a threat to human health and the environment to support informed decision-making by industry, government, non-governmental organizations and the public; and Greenhouse Gas (GHG) data from large direct emissions sources and suppliers of certain fossil fuels and industrial gases in the United States, collected to better understand these emissions and to inform potential emision reduction activities. Envirofacts also supports other major Agency applications like OEI's My Environment (MyE) and OSWER' Cleanups in My Community (CIMC), that both pull data from the EnviroFacts Data Warehouse to report on environmental and program data including Brownfields, Superfund, RCRA Corrective Action, etc.

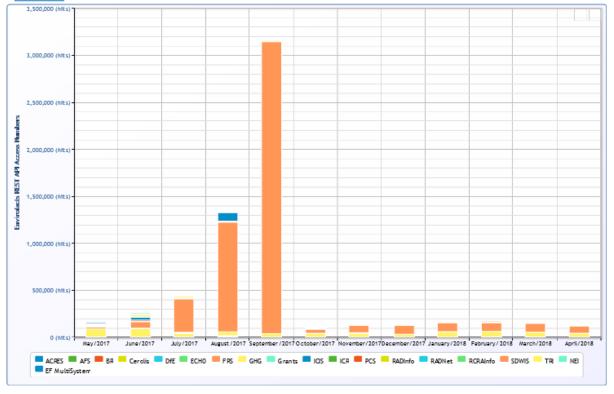
Customers: Public & EPA

- Seven EPA AA-ships (OEI, OAR, OW, OECA, OSWER, OARM, and OCSPP) and 12 different Offices rely on Envirofacts for aspects of their public data access; providing reporting mechanisms and/or data resources supporting their applications.
- Over 30 total EPA customer groups, of which 16 rely on Envirofacts as the sole or major source of public access to its data.
- Program Office systems supported by Envirofacts include: FRS, TRI, Superfund, Greenhouse Gas, RCRAInfo, Drinking Water, AFS, ICIS-NPDES, Brownfields, Grants, RadNet, TSCA, UV Index.
- Supports 12 GIS applications, including GeoPlatform, MyEnvironment, NEPAssist, and Enviromapper.
- Data streams with 8 non-EPA Agencies; supports 5 mobile applications, and 3 EPA Registries
- In one month, Envirofacts recorded 5.5 Million website hits, 7 Million REST API requests, and 17.5 Million database hits.
- Envirofacts supports the Agency's data and reporting needs during Environmental Emergencies like the Japan 2011 Incident.

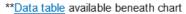
Envirofacts REST API Access by Programs

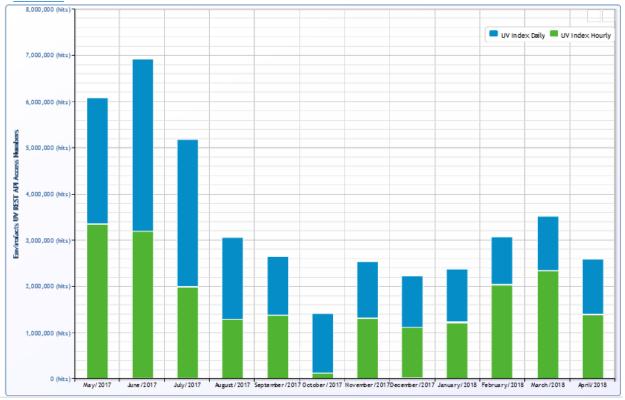
**Does Not Include UV Index (found below in its own chart)





Envirofacts REST API Access for UVI Data





EJSCREEN – In order to better meet the Agency's responsibilities related to protection of public health and the environment, EPA has developed an environmental justice (EJ) mapping and screening tool called <u>EJSCREEN</u>. It is based on nationally consistent data and an approach that combines environmental and demographic indicators in maps and reports. EJSCREEN users choose a geographic area; the tool then provides demographic and environmental information for that area. All of the EJSCREEN indicators are publicly-available data. EJSCREEN simply provides a way to display this information and includes a method for combining environmental and demographic indicators into EJ indexes. Environmental data <u>includes</u> vulnerability to air toxins and high particulate levels, exposure to lead-based paint, and proximity to chemical and hazardous waste treatment centers.

Emergency Operations Center Dashboard is a fully-customized application that provides a more comprehensive approach to both daily operations and emergency responses in EPA Headquarters' Emergency Operations Center. The EOC Dashboard incorporates several websites, tools and applications commonly used by EPA Office of Emergency Management's Watch Officers into a single application. The Common Operating Picture application provides EPA's Office of Emergency Management situational awareness for daily operations and emergency responses across the United States. It integrates all available map services such as imagery, operational data, historical data and modeling data into a single view.

MyEnvironment allows the public to select a specific geographic location and retrieve a cross section of environmental data pertaining to the location – releases and emissions by regulated facilities, Superfund hazardous waste sites, brownfields and ozone forecasts. MyEnvironment provides a community-based picture of environmental information and allows a concerned citizen to identify whether mercury, or some other chemical in the news, may be present (stored, handles, or emitted) in the facilities around them. Links to factsheets and Web sites with information about how this chemical may impact human health

and the environment are provided and offer details about what individuals can do to protect themselves from exposure to the chemical.

NEPAssist is a tool that facilitates the environmental review process and project planning in relation to environmental considerations. The web-based application draws environmental data dynamically from EPA Geographic Information System databases and web services and provides immediate screening of environmental assessment indicators for a user-defined area of interest. These features contribute to a streamlined review process that potentially raises important environmental issues at the earliest stages of project development.

Appendix E - Acronyms for the GAVETS Task Order

Acronym	Definition	
ACOR	Alternate Contracting Officer Representative	
ACP	Agile Certified Practitioner	
ACS	American Community Survey	
ACRES	Assessment, Cleanup and Redevelopment	
, none	Exchange System	
ACT-IAC	American Council for Technology-Industry	
7.61 17.6	Advisory Council	
ADC	Application Deployment Checklist	
AFS	Air Facility System	
AIRS	Aerometric Information Retrieval System	
ANSI	American National Standards Institute	
API	Application Programming Interface	
ASP.NET	web framework	
AWS	Amazon Web Service	
BI	Business Intelligence	
BRS	Biennial Reporting System	
CBI	Confidential Business Information	
CCB	Configuration Control Board	
CO	Contracting Officer	
COOP	Continuity of Operations	
COR	Contracting Officer Representative	
COTR	Contracting Officer's Technical Representative	
COTS	Commercial off-the-Shelf	
EA	Enterprise Architecture	
EC2	Elastic Compute	
ECHO	Enforcement and Compliance History Online	
EDAP	EPA Digital Analytics Program	
EF	Envirofacts	
EIS	Environmental Impact Statement	
EJSCREEN	Environmental Justice Screening Tool	
ELT	Extract Load and Transfer	
EM	EnviroMapper	
EMR	Elastic MapReduce	
EOM	End of Month	
EPA	Environmental Protection Agency	
ERA	Emergency Response Analyzer	
ERD	Entity Relationship Diagram	
ETL	Extract Transfer and Load	
FGDC	Federal Geographic Data Committee	
FIPS	Federal Information Processing Standard	
FRS	Facility Registry System	
GHG	Greenhouse Gas	
GIS	Geographic Information System	
HDFS	Hadoop Distributed File System	
HTML	Hyper Text Markup Language	
HTTP	HyperText Transfer Protocol	
HTTPS	Hyper Text Transfer Protocol Secure	
IAASD	Information Access and Analysis Services	
	Division	
ICIC		
ICIS	Integrated Compliance Information System	

	AIR
ICIS-NPDES	Integrated Compliance Information System for NPDES
IDEA	Integrated Data for Enforcement Analysis
IGMS	Integrated Grants Management System
iOS	Apple Mobile Operating System
IT	Information Technology
JSON	JavaScript Object Notation
MQTT	ISO Standard
NATA	National Air Toxics Assessment
NEI	National Emissions Inventory
NEPAssist	Environmental Review GIS Screening Tool
NPDES	National Pollutant Discharge Elimination
	System
ODSTA	Office of Digital Services and Technical
	Architecture
OEI	Office of Environmental Information
OIM	Office of Information Management
OITO	Office of IT Operations
OCSPP	Office of Chemical Safety and Pollution Prevention
PMI	Project Management Institute
RAML	RESTful API Modeling Language
RCRA	Resource Conservation and Recovery Act
RDBMS	Relational Database Management System
REST	Representational State Transfer
SEGS	Shared Enterprise Geodata Services
SEMS	Superfund Enterprise Management System
TSCA	Toxic Substance Control Act
TRI	Toxic Release Inventory
UVI	Ultraviolet Index
XML	Extensible Markup Language

Appendix F, Cybersecurity Tasks Checklist The full text of the table will be provided as a separate attachment.

Indicated below are the applicable cybersecurity tasks to include in IT requirements, per EPA Acquisition Guide (EPAAG) 39.1.2.

TASK	TITLE	APPLICABLE
Α	Personally Identifiable Information Contract Closeout	
В	Contractor Return of all EPA-Provided and EPA-Activity-Related Information	
С	Verified Secure Destruction of All EPA-Provided and EPA-Activity-Related Information	
D	Contractor Return of all EPA-Owned and Leased Computing and Information Storage Equipment	\boxtimes
Е	Authority to Operate (ATO) Suspension or Revocation	\boxtimes
F	Security Monitoring and Alerting Requirements	
G	IT Security and Privacy Awareness Training	
Н	Specialized Information Security Training for Staff with Significant Security Responsibilities	
I	Federal Reporting Requirements	
J	Protecting Sensitive Information	
K	Security Assessment and Authorization (SA&A)	
L	Contractor System Oversight/Compliance	
M	Contractor Access to EPA IT Systems	\boxtimes
N	Individual Notification for Personally Identifiable Information	
0	Credit Monitoring and Identity Protection	\boxtimes
Р	Compliance with IT Security Policies	
Q	Secure Technical Implementation	\boxtimes
R	Internet Protocol Version 6 (IPv6)	
S	Cloud Service Computing	
Т	Contract Performance Information and Testimony	
U	Rehabilitation Act Section 508 Standards	\boxtimes
V	Termination for Default - Failure to Report Information Security Incident	

TASK KEY:

Requirement Type	Required Tasks
IT Hardware	A,B,C,F,G,H,I,J,K,M,P,Q,R,T,U,V
IT Software	A,F,H,I,J,K,L,M,P,Q,R,T,U,V
Green IT	A,B,C,E,F,H,I,J,K,M,P,Q,R,U,V
IT Services	A,B,C,D,E,G,H,I,J,L,M,O,P,Q,T,U,V
Data Center Services	A,B,C,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,T,U,V
Cloud Computing	A,B,C,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V
Cyber Security Product and Services	A,B,E,F,G,H,I,J,K,L,M,O,P,Q,R,T,V

Appendix G. Non-Disclosure Agreement

NON-DISCLOSURE AGREEMENT FOR CONTRACTOR/SUBCONTRACTOR EMPLOYEES, SENIOR MANAGERS OR CORPORATE OFFICERS (Agreement)

l,	(clearly print or type name), an employee,
I,senior manager, or corporate officer of either	or a subcontractor
to	under
awarded to	by the General
Services Administration (GSA) for Customer, U.S. Er	
disclose to any third party or anyone who is not perfor	ming work for the Customer and who does not have
a need to know such information, any proprietary, so	
or budgetary information contained in or accessible	through the customer's programs and activities.
Proprietary, programmatic, budgetary and source sele	ection sensitive information and data will be handled
in accordance with Government direction under the O	
regulations, including Federal Acquisition Regulation (
I understand that information I may receive or posses	
or EPA activities under this contract may be con	
information. The responsibilities of my employer for	
disclosure of proprietary or source selection sensitive	
to FAR 3.104, I agree that I shall not appropriate suc	
with third parties unless specifically authorized by the	FAR procedures.
This Agreement shall continue for a term of five (5) ye	
such information. Upon expiration of this Agreeme	nt, I have a continuing obligation not to disclose
proprietary, programmatic, budgetary or source sele	ection sensitive information to any person or legal
entity unless that person or legal entity is authorized	by the Government to receive such information. I
understand that any violation of my duty to protect pr	oprietary or source selection sensitive information I
was exposed to while working as an employee of	company working under
the Prime Contract, subcontract, or task order as refer	renced above may subject me, and/or my employer,
to administrative, civil and criminal sanctions.	
If signing as a corporate officer of either the Prime or	Subcontractor, I certify that I am a duly authorized
representative with legal authority to bind the company	y .
Agree and Accepted:	
(O)	
(Signature of Employee/Sr. Mgr/Officer)	
(Date)	
(Date)	
(Printed Name) (Company Name)	
75	
(Position)	
(Printed Name of Employer) (Printed Name of Employ	rer)